REMARKS

The drawings are objected to for not showing "attenuating elements". Transmitted herewith is a new sheet of drawings which includes new FIG. 3, which illustrates the attenuating element (A), as recited in claims 6 and 7. Support for new FIG. 3 is provided in paragraph [0018] of the originally-filed specification, which discloses that the attenuating element is inserted in the break U2 that is not occupied by a module M1,M2,M3 (see FIG. 1). Thus, FIGS. 1-3 illustrate every feature of the invention specified in the claims, and thus comply with 37 CFR §1.83(a). Additionally, the specification has been amended, to make reference to new FIG. 3 and the attenuating element (A). Accordingly, the objection to the drawings should be withdrawn.

Claims 4-9 are currently pending and presented for examination. The Examiner has rejected claims 4-9 under 35 U.S.C. §103(a) as being unpatentable over Levy et al. in view of Webb or Sauter. Applicants respectfully request reconsideration and allowance of the pending claims in view of the following remarks.

Rejection of Claims 4-9 under 35 U.S.C. §103(a)

Independent claim 4 was rejected as being unpatentable over Levy et al. in view of Webb or Sauter. Independent claim 4 recites an optical waveguide for guiding optical signals, where the optical waveguide has a number of breaks relative to a propagation direction of the optical signals. Independent claim 4 further recites a plurality of modules plugged into a slot assigned to each break, and each module includes a coupling unit for coupling the optical signals to the respective module. Independent claim 4 further recites that the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals. Neither Levy et al., Webb, Sauter, nor any cited prior art reference discloses these recitations, and accordingly, independent claim 4 is patentable.

Levy et al. discloses an optical-interconnect housing system 60 (see FIG. 6a), including an optical fiber 51 which is inserted into a docking port 42a of an optical connector housing 33 (Col. 3, lines 26-30). The optical connector housing 33 includes a partially-reflective mirror 63 to direct light from the optical fiber 51 through a light pipe 54 and into an optical transmitter/receiver 61 of the optical connector housing 33 (Col. 3, lines 28-32). Light may be re-transmitted by the optical transmitter/receiver 62 through a light pipe 53 and to a partially-

reflective mirror 64 of the optical connector housing 33, before entering the optical fiber 52, which is inserted into a docking port 42b of the optical connector housing 33 (Col. 3, lines 37-40). Levy et al. expressly teaches that "the optical fiber ribbon docking ports 42a and 42b, mirrors 63 and 64, and light pipe or lenses 53 and 54 form the optical connector 33." (Col. 3, lines 42-44)(emphasis added). Thus, since the optical fibers 51,52 are inserted into the optical connector housing 33, along the propagation direction of the optical signals through the optical fibers 51,52 (see FIG. 6a), the break between the optical fibers 51,52 is less than the dimension of the optical connector housing 33, in the propagation direction of the optical signals through the optical fibers 51,52.

The Examiner contended that Levy et al. teaches that the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals, as recited in independent claim 4, and cited to FIGS. 5, 6a-b, Col. 3 lines 6-67 and col. 4, lines 1-57, in support thereof. As discussed above, the embodiment illustrated in FIG. 6a, and the above-cited portions of Levy et al. emphasize that the dimension of the break in the optical fibers 51,52 is less than the dimension of the optical connector 33, in the propagation direction of the optical signals through the optical fibers 51,52. Indeed, the optical fibers 51,52 are inserted within the optical connector housing 33, in the propagation direction of the optical signals through the optical fibers 51,52. Thus, Levy et al. fails to disclose that the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals, as recited in independent claim 4. Accordingly, independent claim 4 is patentable for this reason alone.

Furthermore, the Examiner has merely cited to drawings and two columns (Col. 3, lines 6-67; Col. 4, lines 1-57) of Levy et al., and contended that the recitation "the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals" corresponds in some unspecified way to these two columns. However, the Examiner never indicated which of the host of things discussed in these two columns correspond to "the breaks", "the dimension of the breaks", "the coupling unit", or the "dimension of the coupling units," and how the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals. The pertinence ... must be explained. 37 C.F.R. § 1.104(c)(2). The Examiner simply points to the paragraphs describing a multitude of elements, without indicating which are thought pertinent, or

how. Therefore, in order to properly respond to the Examiner's rejection, the Applicants respectfully requests that the Examiner identify what the Examiner considers "the breaks", "the dimension of the breaks", "the coupling unit", and "the dimension of the coupling units" and how the dimension of the breaks is slightly larger than the dimension of the coupling units, relative to the propagation direction of the optical signals.

The Examiner conceded that Levy et al. fails to disclose that each coupling unit includes first and second optical waveguide parts, that one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, and looked to Webb and/or Sauter to provide this noted deficiency. Neither Webb nor Sauter discloses the coupling unit including the first and second optical waveguide parts, as recited in independent claim 4, and accordingly, independent claim 4 is patentable.

Webb discloses an optical interconnect system (see FIG. 5) including glass rods 3 with spherical end surfaces 4,5 (see FIG. 9) having a spherical surface radii of 6.72 ±0.08 mm (col. 3, lines 42-55). Webb discloses that a beamsplitter 8 is positioned between the glass rods 3, and a lens 7 which receives input from an array of semiconductor laser diodes (Col. 3 line 65 – Col. 4 line 8). The Examiner contended that FIG. 5-6, Col. 3 lines 40-67 and Col. 4 lines 1-62 of Webb discloses the coupling unit including the first and second optical waveguide parts, where one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited above in independent claim 4. However, as discussed above, the glass rods 3 (see FIG. 9) have spherical end surfaces 4,5 with a spherical surface radius of 6.72 ±0.08 mm. Thus, the glass rods 3 are not an optical waveguide part with an oblique end face. Additionally, the beamsplitter 8 merely includes "a back reflector mounted on the backplane" (Col. 4, line 1), and thus does not include a first and second optical waveguide part, where the first optical waveguide part has an oblique end face to couple out optical signals from an optical waveguide, and where the second optical waveguide part has an oblique end face to couple optical signals from a waveguide. Thus, the Examiner has respectfully mischaracterized the teachings of Webb. Indeed, Webb fails to disclose a module including a coupling unit, where the coupling unit has a

first and second optical waveguide parts, that one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited in independent claim 4. Accordingly, independent claim 4 is patentable for this reason alone.

Sauter discloses an optical bus 10 (see FIG. 1) where a transmitter 30 directs a light beam through an optical fiber 40 to a rod-lens 42, which passes the light beam to a beam-splitting prism 48 (Col. 4 line 50 – Col. 5 line 20). The beam-splitting prism 48 directs the light signal through a rod-lens segment 50 (Col. 5 lines 20-34). The Examiner contended that FIG. 1, and col. 4 line 52 – col. 7 line 4 discloses the coupling unit including the first and second optical waveguide parts, where one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited above in independent claim 4. None of the teachings in Sauter, including the rod-lens 42 and the beam-splitting prism 48, disclose the coupling unit, first optical waveguide part, and/or second optical waveguide part, as recited in independent claim 4. Sauter discloses that the rod-lens' 42,44 "are oriented normal to the transmitting and receiving path GRIN rod lens segments" and that the end faces of the rod-lens' 42,44 "are also glued to the face of a beam-splitting prism" (Col. 6, lines 34-48). Thus, the end-face of the rod-lens' 42,44 are not disclosed as an oblique end face, as such an arrangement would not permit the rod-lens' 42,44 to be simultaneously oriented normal to the rod lens segments 50,54 and to be glued to the face of the beam-splitting prism 48. Regarding the beam-splitting prism 48, although it directs light to/from the lens segments 50,54, this teaching fails to disclose a first and second optical waveguide parts, where one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited above in independent claim 4. In fact, the sole optical waveguides 38,37,40,41 disclosed in Sauter are merely used to direct light signals into/from the rod-lens' 42,44,39,47, without any coupling unit having first and second optical waveguide parts, as recited in independent claim 4. Indeed, Sauter fails to disclose a module including a coupling unit, where the coupling unit has a first

and second optical waveguide parts, that one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited in independent claim 4. Accordingly, independent claim 4 is patentable for this reason alone.

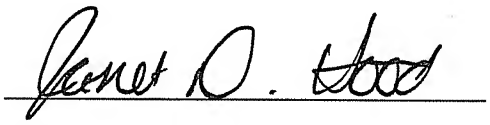
Furthermore, the Examiner cited to FIGS. 5-6, col. 3 lines 40-67, and col. 4, lines 1-62 of Webb, and FIG. 1, col. 4, line 52 – col. 7 line 4 of Sauter, and contended that Webb or Sauter discloses a module including a coupling unit, where the coupling unit has a first and second optical waveguide parts, that one end of the first optical waveguide part has an oblique end face for completely coupling out the optical signals from the optical waveguide, and one end of the second optical waveguide part has an oblique end face for coupling the optical signals into the waveguide in the propagation direction, as recited in independent claim 4. However, the Examiner never indicated which of the host of things discussed in the two columns of Webb and the four columns of Sauter correspond to "the optical waveguide", "the coupling unit", "first and second optical waveguide parts", "an oblique end face", and how the oblique end face of the first and second optical waveguide parts respectfully couples optical signals into/from the waveguide. The pertinence ... must be explained. 37 C.F.R. § 1.104(c)(2). The Examiner simply points to two columns of Webb and four columns of Sauter describing a multitude of elements, without indicating which are thought pertinent, or how. Therefore, in order to properly respond to the Examiners rejection, the Applicants respectfully requests that the Examiner identify what the Examiner considers "the optical waveguide", "the coupling unit", "first and second optical waveguide parts", "an oblique end face", and how the oblique end face of the first and second optical waveguide parts respectfully couple optical signals into/from the waveguide.

In view of the above, independent claim 4 is patentable. Furthermore, in view of the patentability of claim 4, it is also submitted that all of their dependent claims, that recite yet further distinguishing features, are also patentable. These dependent claims require no further discussion herein.

Conclusion

For the foregoing reasons, it is respectfully submitted that the rejections set forth in the outstanding Office Action are inapplicable to the present claims. Accordingly, Applicants respectfully request that the Examiner reconsider the rejections and timely pass the application to allowance. All correspondence should continue to be directed to our below-listed address. Please grant any extensions of time required to enter this paper. The commissioner is hereby authorized to charge any appropriate fees due in connection with this paper or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

By: 

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